



**Department of
Environmental Protection
Bureau of Land & Water Quality October 2003**

O&M Newsletter

A monthly newsletter for wastewater discharge licensees, treatment facility operators,
and associated persons

PLAN AHEAD

Maintenance and upgrade projects can result in temporary changes to normal effluent treatment at your treatment plant. Detention times may change. Major parts of the treatment system may be offline for short periods of time. Disinfection systems may have to be taken offline temporarily. Pumps and pipelines may be out of service.

When you schedule a major maintenance project at your treatment facility be sure to consider and plan for these temporary changes. In most cases, advance planning can assure that plant effluent does not exceed license limits. The department does not consider a planned maintenance or upgrade project as an adequate excuse for exceeding license limits. There are three simple steps you can take to avoid violations.

1. Plan ahead

Before starting any maintenance project, consider what effect the maintenance will have on the normal operation of the treatment system. Are major portions of the treatment system such as the clarifiers, RBC's, lagoons, trickling filters, aeration systems or pumps going to have be offline while the work is being done? If the answer to this question is yes, then you need to plan ahead to assure the wastewater receives adequate treatment.

A wide variety of factors can determine how a maintenance project effects your treatment system. Use the following checklist as a planning tool in advance of construction, upgrade or maintenance projects.

1. Be sure the construction, maintenance or repair plan/contract defines what operational responsibility the contractor has, who can make changes to the operation, and who is responsible in the event that exceptions occur.
2. Schedule work that will disrupt treatment or will take essential treatment units off line at times when seasonal or daily flows are low.
3. Make sure temporary pumps, valves, piping etc. are installed as needed to provide pump around or to reach alternate treatment units.
4. Identify excess wastewater storage capacity that can be used to hold untreated water for later treatment after the work is done. Storing wastewater in the collection system and utilizing alternate tankage are examples of some storage options.
5. Consider using trucks to transfer wastewater around the construction, maintenance or repair point.
6. Work with local industries and large commercial establishments to reduce wastewater discharges during the work period or do the work when these facilities are not operating (off season, annual shutdown, weekends, nights).

7. Plan ahead to assure the crew is large enough and that all the necessary parts, tools, and machinery are available and operational so the work can be completed as quickly as possible.
8. Increase effluent quality monitoring to detect construction-related impacts early so corrective actions can be taken before violations occur.
9. Maximize the performance of primary processing and any other major treatment units that are still on line.
10. Plan to use settling agents, polymers, and other chemical treatment aids to maximize clarification and the performance of other treatment units. Order extra chemicals ahead so you have enough on hand.
12. Maintenance or upgrade projects frequently require temporary changes to your normal treatment procedures. As a result, additional sampling and testing may be necessary. Decide on a process control strategy to use during the construction event and adjust as necessary as construction progresses. This sampling can warn you if a system is reaching its treatment capacity and allow you to make adjustments to avoid violations of your license limits. Plan ahead to be sure to make sure you have any additional materials and equipment for this additional sampling on hand.
14. Plan construction activities so the least disruptive sequence is followed. For example, upgrade only one clarifier at a time so that as many duplicate units are available for interim treatment as possible; replace or rebuild a pump when it is not essential to the treatment process, etc.
15. If a tank needs to be emptied for construction purposes make sure it is drawn down in a "treatment friendly" manner. Tank contents should be bled into the treatment process or transferred to another tank beforehand, not dumped in a bypass or as a shock load into the system during the construction event.
16. Consider the weather when planning when you will do system maintenance and upgrades and use it to your advantage whenever possible. Consider the weather when planning when you will do system maintenance and upgrades and use it to your advantage whenever possible. Most treatment plants operate more efficiently in the warmer months. Outdoor construction also goes faster and more smoothly in warm weather. Some construction (Pouring concrete, roofing etc.) can only be done in warmer weather. Some treatment systems are used only seasonally (disinfection).
17. Plan ahead so power shut downs are as few and short as possible. If power is going to have to be off for a longer period of time, make arrangements for a back up power source. For larger projects, assume that there will be some unexpected power outages and make sure you and your contractor are prepared to deal with them quickly and efficiently.
18. Most treatment systems are piped to allow a number of options for flow. Be familiar the alternate flow options at your plant and use them to your advantage when planning construction, maintenance and upgrade work. If you will be using pipes, pumps and valves that are not normally used, check these systems ahead of time to make sure they are operational.

2. Communicate

Talk with your contractor and the project engineer to make sure they understand the limits of your system. Write requirements for back up power, downtime limitations and spare parts on hand into the contract. For example, if the project calls for shutting down your aeration system temporarily and your experience and calculations indicate it can not be shut down for more than 2 hours without killing the bugs then tell your contractor this and make it clear they cannot exceed this limit. Plan together how you will avoid exceeding this limit. Make sure necessary repair parts and equipment are on hand before a system is taken off line for repair or replacement.

If you would like a second opinion on your plans for process control and treatment during a particular project ask your inspector. They will be happy to review your plans with you or to ask one of the engineers here for their input.

3. No surprises

Meet with your contractors regularly during the project and be available by phone or pager if something comes up while you are offsite. Monitor the treatment process more frequently to make sure the treatment system is working properly. If your planning indicates that there is no way to avoid violations of your license limits during a particular project then let your inspector know this well in advance. Violations of license limits that result from deliberate actions such as planned maintenance or upgrade work are much more likely to result in enforcement action. If you do exceed your license limits as a result of maintenance or upgrade work, call your inspector immediately and let them know. Don't wait until you fill out your DMR 4 or 5 weeks later.

IN SUMMARY

Maintenance and upgrade work can stress a treatment system and make it more difficult to meet discharge limits. Advance planning will allow you to do the best job possible under these conditions. Remember to communicate with everyone involved in the work and with your DEP inspector. Keep surprises to a minimum by inspecting contractors work regularly, by monitoring your wastewater more often and notifying your inspector if problems do occur.

Beth DeHaas

News from Enforcement

Administrative Consent Agreements and SEPs

The DEP's Compliance Policy identifies several different tools for preventing and resolving compliance problems. These include: letter of warning; notice of violation; administrative consent agreements; 80 K action; referral to the Department of Attorney General; and, enforcement by federal, state, and local entities. The DEP's preference in resolving civil enforcement actions is to reach agreements as quickly as possible that: remediate environmental damage; restore natural resources to appropriate conditions; impose penalties that capture any economic benefit gained by the violator; and, deter similar actions in the future.

The DEP and the Attorney General may consent to a violator performing an environmentally beneficial project, or so-called Supplemental Environmental Project ("SEP") as part of resolving an enforcement action with a consent agreement. Limitations on SEPs are contained in the DEP's Supplemental Environmental Projects Policy and Title 38 M.R.S.A. § 349.2. It is important to note that SEPs may not be used for the following situations:

- (1) Repeat violations of the same or a substantially similar law administered by the department by the same person;
- (2) When a project is required by law;
- (3) If the violator had previously planned and budgeted for the project;
- (4) To offset any calculable economic benefit of noncompliance;
- (5) If the violation is the result of reckless or intentional conduct; or,
- (6) If the project primarily benefits the violator.

For further information regarding SEPs, please refer to the appropriate statute and rule or contact the Water Enforcement Unit at 287-3901. Additional information can also be found on the Department's web site at: <http://www.maine.gov/dep/poliguid.htm>.

Recent Enforcement Actions

At its August 21, 2003 meeting the Board of Environmental Protection approved two Administrative Consent Agreements involving violations of Maine waste discharge licenses.

A community has agreed to pay a civil monetary penalty of \$39,683, of which \$14,683 has been suspended in lieu of timely completion of a number of corrective actions which may culminate in replacement and upgrading of the wastewater treatment facility and/or elimination of the discharge. The community is licensed to operate a primary wastewater treatment facility under a 301(h) waiver of secondary treatment. Violations listed in the Consent Agreement included: failure to, at all times, maintain in good working order and operate at maximum efficiency all wastewater collection, treatment and/or control facilities; repeated flow limit violations; and repeated fecal coliform limit violations.

A community has agreed to pay a civil monetary penalty of \$2,654 and take appropriate corrective actions. The primary

reason for the enforcement action was the decision by the contract operator to not purchase additional dechlorination chemicals after the existing supply of chemicals was used up and the resulting two residual chlorine violations. In addition, upon close examination of the compliance record, the Department identified sampling and reporting errors and included them in the Consent Agreement, as well.

For Practice:

- 1) The sensitivity of an instrument used to perform a laboratory test is a measure of
 - a) The accuracy of the average measurement
 - b) The precision of the median measurement
 - c) The accuracy of the smallest or largest measurement made
 - d) The values of all measurements repeatedly.
- 2) The basic unit of electrical potential is:
 - a) The watt
 - b) the ohm
 - c) the volt
 - d) the ampere
- 3) If water in a channel is passing a given point at 2.8 cubic feet per second, how many gallons of water will pass that point in 5 minutes?
 - a) 6,300 gallons
 - b) 3,865 gallons
 - c) 1,570 gallons
 - d) 33.75 gallons
- 4) What is the name of one chemical that can be added to a bacteriological sample to remove residual chlorine from the sample?
 - a) Sodium hydroxide
 - b) Sodium thiosulphate
 - c) Sodium chloride
 - d) Sodium hexametaphosphate

Certification News

The Fall Wastewater Treatment Plant Operator Exam will be given in the usual locations on November 12, 2003. Applicants should have received a confirmation letter from the DEP by now. If you thought you signed up for the test and haven't received your letter, contact Leslie Rucker at (207) 287-9031. The Spring exam will be given on May 12, 2004.

Amendment to the Wastewater Operator Certification Rules

The MeDEP is proposing to amend the Wastewater Treatment Plant Operator Certification rules (Chapter 531). The amended rules will Retain Five Operator Grades for Biological Treatment and the three operator grades for Physical/ Chemical Treatment

The amendments will add two grades of Spray Irrigation System Operators. As with the existing grades, all new operators or those who want to move up through the grades must pass a written test

The new category of wastewater treatment systems, Spray Irrigation Systems, is divided into two grades:

Grade 1 treatment systems include one or more stabilization ponds followed by spray irrigation with no direct discharge to a surface water body. These systems can be used to treat only domestic sanitary wastewater and must have a spray irrigation site size of 10 acres or less

Grade 2 Treatment systems also include one or more stabilization ponds followed by spray irrigation with no direct discharge to a surface water body. Grade 2 systems can be used to treat domestic sanitary wastewater or industrial process wastewater or have a spray irrigation site size of more than 10 acres.

The requirements for Spray Irrigation System operators include graduation from high school (or equivalent); or, at least two years experience operating a Spray Irrigation treatment system. Any person holding a Grade 2 Biological Wastewater Treatment Plant Operator Certification (or higher) and who works at a spray irrigation treatment facility at the time the rule becomes effective will be "grandfathered". After the effective date of the rule Certified Operators who do not have experience with spray irrigation systems and who wish to be certified to operate Spray Irrigation Treatment Systems must pass the appropriate exam.

Every Operator including the new category of Spray Irrigation System operators must renew their certificate every two years by March 1st. Operators with odd numbered certificates renew in odd years and operators with even numbered certificates renew in even years. Every operator must complete 18 contact hours of training in the two year renewal period except that Small Spray Irrigation System Operators will be required to attend six hours of training every two years and that training must be relevant to wastewater treatment system operation.

The amendments also propose to change the fee structure for the Operator Certification program. We propose to allow the DEP Commissioner to set fees within certain boundaries. The following table shows the proposed fee schedule:

	Max. Fees	Initial Fees
<i>Initial Certification</i>	\$ 75.00/Grade	\$ 40.00/Grade
<i>Re-examination</i>	\$ 50.00/exam	\$ 30.00/exam
<i>Biennial Renewal Fee</i>	\$ 50.00	\$ 20.00
<i>Recertification Fee</i>	\$ 75.00	\$ 40.00

Other Changes proposed in the amendments include:

Contracts for facility operation must be submitted to the facility inspector and approved by the DEP within two weeks of the contractor being retained by the permittee. The present rule requires the contract to be submitted and approved before the contractor starts. The contract review process will remain essentially the same.

Minor wording changes and clarifications.

The proposed rule changes are now undergoing internal review at the DEP. When the internal review is completed, a draft proposed rule will be submitted to the Executive Committee of the MWWCA. There will be opportunity for operators to review and comment on the proposed rule through MWWCA or as individuals. The rule must go through the process outlined in the Maine Administrative Procedures Act. This is a 44 step process that includes public review and comment, BEP review and review by the Legislature. We anticipate that the new rules will go into effect in late Spring or early Summer 2004.

Dick Darling

Approved Training

October 7 & 8, 2003 in Portland, ME – Basic Microbiology & Filamentous Bacteria Identification – Sponsored by JETCC/NEIWPCC, (207) 253-8020 – Approved for 12 hours.

October 16, 2003 in Waterville, ME – Advanced Excel Spreadsheets with Tips for Managing e-mail – Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

October 21, 2003 in Mexico, ME – Excavation: Competent Person Training – Sponsored by MWRA, (207) 729-6569 – Approved for 5 hours.

October 22, 2003 in Boothbay, ME – Excavation: Competent Person Training – Sponsored by MWRA, (207) 729-6569 – Approved for 5 hours.

October 23, 2003 in Livermore Falls, ME – pipe maintenance for Clay & Root Infiltration – Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

October 30, 2003 in Presque Isle, ME – BOD, Seeded BOD. E-Coli, Solids & Microscopic Examination - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

October 30, 2003 in Presque Isle, ME – Solids Handling, Utility Mgmt & Disinfection – Sponsored by MWRA, (207) 729-6569 – Approved for 6 hours.

November 5, 2003 in Brunswick, ME – Centrifugal Pump Hydraulic Application & Troubleshooting - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

November 6, 2003 in Portland, ME – New Technologies in Phosphorous Removal - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

November 6, 2003 in Brunswick Isle, ME – Solids Handling, Utility Mgmt & Disinfection – Sponsored by MWRA, (207) 729-6569 – Approved for 6 hours.

November 13, 2003 in Augusta, ME – Caring for you lab instruments, Establishing a Lab QA/QC Program & proper Sampling Techniques - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

November 19, 2003 in Norway, ME – Excavation: Competent Person Training –

Sponsored by MWRA, (207) 729-6569 –
Approved for 5 hours.

November 20, 2003 in South Portland, ME –
SCADA System Management &
Maintenance - Sponsored by JETCC, (207)
253-8020 – Approved for 6 hours.

December 2&3, 2003 in Freeport, ME -
MRWA Annual Conference – Sponsored by
MWRA, (207) 729-6569 – Approved for
TBA hours.

December 9, 2003 in Presque Isle, ME –
Safety/Security Screening of wastewater for
toxicity & Simplifying your Wastewater
Process Monitoring - Sponsored by JETCC,
(207) 253-8020 – Approved for 6 hours.

December 11, 2003 in Augusta, ME – 10
Best Kept Water & Wastewater
Management Secrets with Simplified
Nutrient Monitoring in Small Wastewater
Systems - Sponsored by JETCC, (207) 253-
8020 – Approved for 6 hours.

December 12, 2003 in Augusta, ME –
Chlorination Disinfection Science:
Comparing Gas, Liquid and Powder
Chlorination Process plus 10 Best Kept
Water & Wastewater Management Secrets -
Sponsored by JETCC, (207) 253-8020 –
Approved for 6 hours.

Answers to *For Practice*:

1. c. The sensitivity of an instrument is that instrument's ability to measure a large or small quantity. For example, a pipette calibrated to 1/100 of a ml is more sensitive than a pipette calibrated to 1/10 of a ml.
2. c. The volt is the unit used to express electrical potential.
3. a. $2.8 \text{ CFS} \times 7.5 \text{ gallons/cubic foot} \times 60 \text{ seconds/minute} \times 5.0 \text{ minutes} = 6,300 \text{ gallons.}$
4. b. Sodium thiosulphate ($\text{Na}_2\text{S}_2\text{O}_3$) is the dechlorination agent normally used to remove residual chlorine from bacteriological samples. Sodium thiosulphate should not be used for BOD samples because sodium thiosulphate will react with dissolved oxygen and give an inaccurate BOD_5 result